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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant (s): Terry W. Balko *et al.*

Serial No.: 10/816,611

Group Art Unit: 1616

Filed: April 2, 2004

Examiner: Qazi, Sabiha Naim

For: 6-ALKYL OR ALKENYL-4-AMINOPICOLINATES AND THEIR USE AS  
HERBICIDES


I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING  
TRANSMITTED VIA FACSIMILE TO 571-273-8300 AND ADDRESSED  
TO COMMISSIONER FOR PATENTS, ALEXANDRIA, VA 22313 ON:

November 15, 2007


DATE OF DEPOSIT

Melanie S. Bradley

PRINT OR TYPE NAME OF PERSON SIGNING CERTIFICATE



SIGNATURE OF PERSON SIGNING CERTIFICATE



DATE OF SIGNATURE

Commissioner for Patents  
PO Box 1450  
Alexandria, Virginia 22313

Sir:

AFFIDAVIT UNDER 37 C.F.R. § 1.132

STATE OF INDIANA )  
 ) SS:  
COUNTY OF MARION )

I, Paul R. Schmitzer, residing at 7960 North Whittier Place, Indianapolis, County of  
Marion, State of Indiana, United States of America, being duly sworn, depose and say,

THAT I received the degree of Bachelors of Science in Biochemistry from Northern  
Michigan University in 1989;

THAT I am the author or co-author of 6 publications in refereed journals;

THAT I have been employed by Dow AgroSciences LLC or its predecessor companies  
since 1991;

THAT my present position is that of Senior Research Specialist in Weed Management  
for Discovery Research;

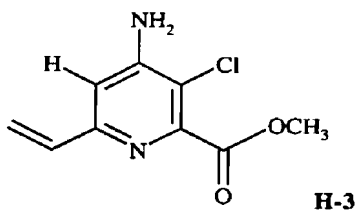
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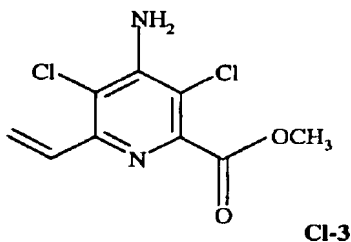
THAT in my current position I am involved in evaluating synthetic materials and compositions for herbicidal activity;

THAT I carried out, or had carried out under my direction, under carefully controlled conditions, a series of pre-emergent and post-emergent herbicidal evaluations of:

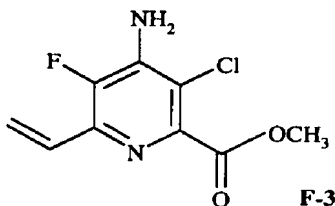
Methyl 4-amino-3-chloro-6-vinylpyridine-2-carboxylate



Methyl 4-amino-3,5-dichloro-6-vinylpyridine-2-carboxylate



Methyl 4-amino-3-chloro-5-fluoro-6-vinylpyridine-2-carboxylate



THAT the procedure and the results obtained were as follows:

For general pre-emergent comparisons, representative compositions of Compounds H-3, Cl-3 and F-3 were evaluated for pre-emergence control of 19 species of plants. In these evaluations, seeds of plant species were planted in soil medium consisting of 80% mineral and 20% crushed, washed stone in pots with a surface area of 530 cm<sup>2</sup>.

Technical material (~4.3 mg for the 280 g ai/ha rate) was dissolved in 8 ml of solvent (acetone/DMSO; 97:3 v/v) to prepare a stock solution. The spray solutions were made by injecting 4 ml aliquots of the stock solution into 1 l ml of spray solution comprised of water and TWEEN 20 (99.9:0.1 v/v).

Solutions (approximately 2.5 ml of spray volume) were sprayed onto the soil of the pots seeded with the test species using a Cornwall 5.0 ml glass syringe fitted with a TeeJet TN-3 hollow cone nozzle. Other pots were sprayed with similar compositions containing no active ingredient to serve as controls.

Thereafter, the pots were maintained under conditions conducive to plant growth. Three weeks after treatment, the pots were examined for plant growth and evaluated on a scale of 0 to 100 where 0 represents no effect and 100 represents complete kill. The controls had 0 ratings for all species.

By applying the well-accepted probit analysis as described by J. Berkson in *Journal of the American Statistical Association*, 48, 565 (1953) and by D. Finney in "*Probit Analysis*", Cambridge University Press (1952), percent control data from the test methods described can be used to calculate GR<sub>20</sub>, GR<sub>50</sub> and GR<sub>80</sub> values, which are defined as growth reduction factors that correspond to the effective dose of herbicide required to kill or control 20 percent, 50 percent or 80 percent, respectively, of a target plant.

The results are set forth below in Table 1.

**Table 1: Comparison of Pre-emergent Data for 6-alkenyl picolinates**

Compound	BWave GR <sub>80</sub>	GWave GR <sub>50</sub>	ZEAMX GR <sub>20</sub>	ORYSA GR <sub>20</sub>	TRZAS GR <sub>20</sub>
	----- g ai/ha -----				
H-3	709	>560*	>560	>560	>560
Cl-3	939	>560	>560	527	>560
F-3	79	136	42	<35	150

\* >560 means that the concentration of compound needed to reach this effect was so high it could not be extrapolated.

BW broadleaf weeds

GW grass weeds :

GR<sub>80</sub> concentration of compounds causing 80% growth reduction

GR<sub>50</sub> concentration of compounds causing 50% growth reduction

GR<sub>20</sub> concentration of compounds causing 20% growth reduction

ZEAMX *Zea mays* Maize

ORYSA *Oryza sativa* Rice, common

TRZAS *Triticum aestivum* Wheat, spring

For general post-emergent comparisons, representative compositions of Compounds H-3, Cl-3 and F-3 were evaluated for post-emergence control of 23 species of plants. Test species were grown from seed in SunGro Metro-mix 360 (Vermiculite, sphagnum, peatbark, ash: 37-47%, 31-45%, 12-25%, pH 6.0 - 6.8) in square plastic pots with a surface area of 91 cm<sup>2</sup>. All species were reared under conditions conducive for plant growth until the desired stage of growth was reached.

Technical material (~ 15 mg for the 500 ppm rate) was dissolved in 4 ml of solvent (acetone/DMSO; 97:3 v/v). If the material was not readily dissolved sonication or gentle warming was used until solubilized. Once dissolved, the solution was serially diluted to achieve desired dose response. Thirteen ml of solvent (water/acetone/isopropyl alcohol/DMSO/Agri-ex/Triton X-155; 46:40:12:1:1:0.02 v/v) were added to each of the bottles containing the 2 ml aliquots.

Thereafter, the plants were maintained under conditions conducive to plant growth. Two weeks after treatment, the treated plants were examined for plant growth and evaluated on a scale of 0 to 100 where 0 represents no effect and 100 represents complete kill. The controls had 0 ratings for all species.

By applying the well-accepted probit analysis as described by J. Berkson in *Journal of the American Statistical Association*, 48, 565 (1953) and by D. Finney in "*Probit Analysis*", Cambridge University Press (1952), percent control data from the test methods described can be used to calculate GR<sub>20</sub>, GR<sub>50</sub> and GR<sub>80</sub> values, which are defined as growth reduction factors that correspond to the effective dose of herbicide required to kill or control 20 percent, 50 percent or 80 percent, respectively, of a target plant.

The results are set forth below in Table 2.

**Table 2: Comparison of Post-emergent Data for 6-alkenyl picolinates**

Compound	BWave GR <sub>80</sub>	GWave GR <sub>50</sub>	ZEAMX GR <sub>20</sub>	ORYSA GR <sub>20</sub>	TRZAS GR <sub>20</sub>
			----- ppm -----		
H-3	387	>500*	>500	>500	>500
Cl-3	>500	>500	>500	>500	>500
F-3	95	678	379	374	347

\* >500 means that the concentration of compound needed to reach this effect was so high it could not be extrapolated.

BW broadleaf weeds

GW grass weeds

GR<sub>80</sub> concentration of compounds causing 80% growth reduction

GR<sub>50</sub> concentration of compounds causing 50% growth reduction

GR<sub>20</sub> concentration of compounds causing 20% growth reduction

ZEAMX *Zea mays* Maize

ORYSA *Oryza sativa* Rice, common

TRZAS *Triticum aestivum* Wheat, spring

Further deponent sayeth not.

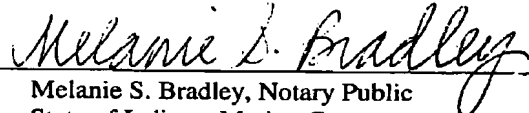


Paul R. Schmitzer

15 Nov 2007

Date

Sworn to and subscribed to me this 15<sup>th</sup> day of November 2007.



Melanie S. Bradley, Notary Public  
State of Indiana, Marion County  
My Commission Expires November 2, 2012